HOW WILL A LARGE URBAN AGENCY USE MEDICAL IMPLANTS FOR BEHAVIOR CONTROL AS A CRIME PREVENTION STRATEGY BY THE YEAR 2007?

A project presented to
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Peace Officer Standards and Training

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This Command College project is a FUTURES study of a particular emerging issue in law enforcement. Its purpose is NOT to predict the future, but rather to project a number of possible scenarios for strategic planning consideration.

Defining the future differs from analyzing the past because the future has not yet happened. In this project, useful alternatives have been formulated systematically so that the planner can respond to a range of possible future environments.

Managing the future means influencing the future: creating it, constraining it, and adapting to it. A futures study points the way.

The views and conclusions expressed in this Command College project are those of the author and are not necessarily those of the Commission on Peace Officer Standards and Training (POST).

TABLE OF CONTENTS

CHAPTER ONE

Issue Identification

Introduction

Little Missy Barnes laughs and giggles as she blows soap bubbles out into the street in front of her home. Her mother had just stepped inside to change the diaper of Missy's little brother John. Missy is a very proud six-year-old big sister and she lets everyone she meets know it. Today it's the nice man who looks like a grandfather walking down the street. She greets him with a proud smile as she stands up tall and blows another stream of bubbles into the street. He approaches Missy, returns her smile, stops and asks Missy where her mother is. Missy, with a sour expression, tells him that her mother is in changing the diaper of her little brother John.

Julie Barnes, with John on her hip, strolls out the front door onto the porch. With John giggling and pulling at her earring, Julie takes a few seconds to realize that something doesn't appear right. She stops walking as she notices that Missy is no longer in the front yard. The pink plastic bottle of bubble mix has spilled on the sidewalk and the round bubble disk is in the middle of the street. Julie yells for Missy as John starts to cry. Missy doesn't answer because Missy has just become another victim of James Doe.

The suspect in the kidnap and murder of Missy Barnes, James Doe, is killed three weeks later in a shootout with local police. Doe's criminal history includes prior arrests for kidnapping, rape and annoying children. Doe was on parole at the time of his death and was considered a violent sexual predator. According to his parole officer, "Doe is likely to reoffend." His psychiatric reports list bipolar schizophrenia along with sexual disorders. He is buried in a pauper's grave to be remembered only by his victims and their families.

Environmental Scan and Literature Review

The events described are fictional only because they are not based upon an actual event but hundreds of similar events that have happened in the last several years across America. As America focuses on terrorism, foreign and domestic, the headlines that are becoming commonplace are lost in the background.

Crime has been characterized as needing three essential elements: a victim, a location and an offender. This triangle of crime identifies 10% of the offenders committing 55% of all crimes (Community Policing Consortium, n.d.). If any one of the three sides of the triangle is missing then crime does not occur. Law enforcement educates community members on methods to reduce their chances of becoming a victim. Locations are reviewed for environmental improvements and crime prevention strategies. The offenders are targeted for aggressive enforcement and profiled in the public.

But are the strategies developed and utilized over the years keeping up with technology and the demands of the community? Community Oriented Policing (COP) strives to form partnerships that allow the police and the community to develop strategies that will ultimately improve quality of life. Problem solving strategies are seen as the tool to accomplish the goals and mission of COP (Goldstein, 1990).

In reviewing the kidnap and murder of Missy Barnes from the crime triangle perspective, the following issues were identified. The victim Missy Barnes was six years old. She had been told not to talk to strangers and to call out for help. She was told by her mother to kick and scream if anything was to happen to her. Missy was given all the information a six-year-old could process and effectively cope with. When James Doe approached, she saw him in the same way she saw the dozens of people who walked past her home weekly, a friendly neighbor who

would smile at how cute she was. She tried to escape by kicking and screaming, but the man was too powerful.

The opportunity was created when Julie Barnes left Missy alone for three minutes while she changed baby John's diaper. But should parents constantly live in fear and lock their children in their homes? Some may say yes and focus most of the problem solving efforts in the area of opportunity. After all, it is difficult to distinguish good people from bad. Or is it?

The third area of the crime triangle is the offender. Much effort has been put into problem solving related to criminals. Proactive enforcement has identified many offenders early on in their criminal careers and sent them off to jails and prisons. Many offenders receive probation or parole which acts as a deterrent in addition to giving law enforcement professionals the opportunity for selective enforcement. Many problem solving efforts that focus on the criminal are reactive in nature, responding to a problem in the hopes of becoming proactive by preventing a future action or event.

A problem solving model taught and used by most California law enforcement agencies was designed by the Newport News, Virginia, Police Department and is known as the SARA model (Kidd & Braziel, 1999). The model breaks problem solving into four key areas, scanning, analysis, response and assessment. The model is taught at most California Commission on Peace Officer Standards and Training courses that integrate problem solving strategies with Community Policing. Although the SARA model provides a broad framework for dealing with a problem, it does not provide techniques to help identify unique and creative solutions.

The lack of creativity and focus on police-community partnerships tend to limit law enforcement response to the offender side of the crime triad. Law enforcement and the community view themselves as jurisdictionally based. The priorities for problem solving tend to

be directed at efforts in the immediate community. There is also tremendous pressure from the community for immediate results within its boundaries. This results in a failure to look at external partnerships. Instead, law enforcement focuses attention on the opportunities and victims in hopes of catching the suspect prior to completing a criminal act or, better yet, by displacing someone whom the community deems as a threat to their quality of life.

In a cursory review of the Missy Barnes abduction and murder using the SARA model relative to James Doe, one could conclude that the result was a failure. Doe was a three-strike candidate who had previously been identified as a potential reoffender. The scanning, analysis and response step of the SARA model all point toward increased contact and assessment of Doe's ability to access victims. Unfortunately, agencies lack the resources for continuous surveillance of potential reoffenders and civil rights groups publicly criticize such efforts as harassment and violation of constitutional guarantees.

The fourth and last step of the SARA model is the assessment where one could only conclude that the scanning, analysis and response all failed. James Doe was able to reoffend in the worst possible way: the abduction and murder of a small child. But what if the SARA was conducted on the resulting failure of community policing to eliminate Doe's potential to reoffend?

The scan of Doe identified a tendency toward violence. It was readily accessible through court documents that Doe was abused as a child. Doe had been admitted to several mental health facilities throughout his adult life. The mental health staff had identified behavior disorders that caused antisocial behavior including a tendency toward sexual aggressiveness and violence. Doe responded well to medication while in mental health facilities but would not continue with any self medication routines. Doe was a transient moving from place to place who stayed in

Northern California. He was an unskilled laborer who couldn't hold a job for more than six months.

The analysis step of the SARA model is the heart of the problem solving model and involves identifying as many characteristics of the problem as possible in an attempt to unearth its causes. Breaking out of the neighborhood centric approach to problem solving allows agencies to broaden their analysis to areas outside of law enforcement's traditional list of partnerships.

The response would indicate that if Doe's tendency toward sexual aggression and violence was identified and treated, he may not reoffend. A hypothesis could also be asserted that without these tendencies he may also be able to hold a job and become a productive member of society. A goal of community policing is improving the quality of life in communities. Therefore, focusing on permanently resolving Doe's antisocial and criminal tendencies would assist in accomplishing this goal.

Genetic Theory Research

Genetic research is helping to identify characteristics that differentiate individuals as well as characteristics that may be predictive, including but not limited to disease, violence and disabilities. Individual genetic makeup is passed from generation to generation through the genes that comprise DNA. These genetic codes consist of proteins which instruct cells to process enzymes that control metabolic process and development.

DNA was first discovered in 1869 and the term gene used in 1909. Eighteen years later in 1920, the theory was set out that chromosomes served as the method by which individual characteristics are inherited. In 1953 the structure of DNA was determined and the first single gene isolated. Genetic engineering began in 1973 and the transfer of a gene from one animal to

another occurred in 1981. Serious scientific breakthroughs started to redefine genetic theory in the 1990 when mice were cured of cystic fibrosis through gene therapy and in 2000 when the first draft of the human genome was completed (Carrington, 2000).

The Human Genome Project was started in 1990 as an effort to interpret and identify the human genetic code. The human genome contains approximately three billion DNA nucleotides that then form 30,000 to 80,000 protein-encoding genes. The initial steps have been completed and the remaining components are estimated to be completed by 2003 (Tarr, 2002).

Genes determine how minds and bodies will develop, function and breakdown. Some people may carry a gene for developing heart disease, obesity or cancer while others carry the gene that protects against the above. Genes are not always bad; individuals may possess the gene that allows them to excel at long distance running, the arts, intellectual endeavors or nurturing.

Behavioral research scientists have discovered a gene that appears to help explain why some boys who are abused or mistreated are more likely to grow up to be aggressive, antisocial or violent as adults. The gene regulates chemical balance in the brain (Vedantam, 2002). In addition, researchers at Purdue University believe they have identified a gene that causes aggressive behavior in hogs (Huppke, 2001). Similar research in mice has identified a genetic variation that has been linked to aggressive behavior. The study also linked the aggressive behavior with a small study conducted in 1993 that identified a rare mutation in the gene across three generations of one family in Holland, which was linked to both violence and mental retardation (Vedantam, 2002).

Pedophilia may also be linked to identifiable genetic markers or irregularities. For decades researchers have been trying to identify unique characteristics of pedophiles. Preliminary results have associated abnormalities in brain cells or sex chromosomes of

pedophiles. Additionally, those who work with offenders compare pedophiles with people addicted to drugs, alcohol or gambling (Brown, 2002).

Admittedly, the fictional story of the abduction and murder of Missy Barnes is a rare occurrence in California where just 57 children were abducted by strangers in 2001. However, there were more than 10,000 reported sexual crimes against children in California during the same time period: a number that hasn't changed much in six years (Brown, 2002). The effects on society of those with some type of behavior disorder are significant. According to the Substance Abuse and Mental Health Administration there are 27 million Americans are chemically dependant (Brevetti, 2001) of which more than 1.1 million are children aged 12-17 years (Leinwnad, 2002). Additionally, according to Harvard professor J. Allan Hobson, more than two million Americans are suffering from mental illness and not receiving the appropriate level of care (Johnson, 2002). Included in some of the numbers reported are those who also commit crimes. In California there are more than 96,000 registered sex offenders, a list that grows by 400 each month (Brown, 2002).

Research in the fields of genetics, behavior disorders and pharmacology have shown great promise. The Human Genome Project, which mapped the human genetic structure, has provided researchers with the opportunity to link gene variants with specific disorders or those that work together with other factors to cause disease (Recer, 2002). The American College of Neuropsychoparmacology reports that psychiatric or behavior phenotypes are subject to genetic influence and that the influence is often substantial. The report also discusses the considerable progress in mapping genes that influence risk for major psychiatric disorders (Gelernter and Goldman, 2002).

The identification and understanding of genes that control the synthesis, storage, release, conservation and metabolism of neurotransmitters responsible for behavior are some critical steps in the ultimate treatment process. The knowledge gained will allow researchers to discriminate between normal mental activity and the pathological mental states of emotion, cognition, and perception. Researchers can then precisely target cells within selected circuits to influence specific systems that mediate or generate behaviors (Bloom, 2002). Once the target is identified, treatments can be prescribed that influence the behavior based upon predetermined neurotransmitter behavior. While this may not seem new, drugs for centuries have been used to influence behavior. The genetic links to behavior will allow for proactive treatments aimed at unique neurotransmitter stimuli without influencing uninvolved transmitters and receptors.

A critical issue with medical treatment as a form of behavior control is the delivery system. Many individuals in need of medication to control behavior fail to self medicate and as a result continue with antisocial or criminal behavior. Implant technology appears to be a viable option.

Implants have taken all types and forms. The National Institutes of Health on January 5, 2000 announced that eight to ten percent of Americans have a permanent medical implant. As an example, biomedical engineers have developed a prototype neuroprosthesis that a quadriplegic can use to grasp and manipulate objects just by thinking about it. The experimental device combines muscle-stimulating electrodes implanted under the skin with a computer sensitive to brain waves. Brain signals activate the electrodes that cause the hand muscles to contract (Blanchard and Peckham, 2000).

In advanced Parkinson's cases, an electrode can be implanted in the brain to relieve movement difficulties by delivering precise pulses of electrical stimulation. University of

Rochester Medical Center researchers claim that the brain pacemaker holds promise for other neurological conditions (Noonan, 2002).

Artificial muscles used in conjunction with implants create what researchers are calling smart pills. The muscle has the ability to contract and relax based on predetermined stimuli. The muscle surrounds a capsule containing medication that dispenses a predetermined dose based upon the electronic or chemical stimulus generated (Madou, 2002). Independently, or combined with electronic stimulus devices, the technology has tremendous opportunity to limit or control the violent tendencies of criminals.

Statement of the Issue

James Doe was a known felon and a sexual predator with psychiatric problems. A true example of someone in need of corrective psychiatric treatment, not just for his own welfare but for the welfare of society. People may argue that James Doe was someone who should have been incarcerated and never allowed to return to society. However, the justice system of the United States said differently and does so in more than a few isolated cases. How then does a law enforcement agency pro-actively handle the James Does of society? What has been learned and what future research is needed to effectively prevent the James Does of a society from offending?

The issue statement for this research project is: How will a large urban agency use of medical implants for behavior control as a crime prevention strategy by the year 2007?

Genetic research combined with pharmacological advances and implant technology will create vast opportunities to improve the quality of life for individuals and communities. Law enforcement has been viewed as a leader in creative problem solving. It is incumbent on law enforcement to look into the future and forecast possible scenarios where medical implants can

be used as a behavior control strategy to reduce crime. The following chapters identify potential scenarios and the strategies necessary to implement the use of this technology.

CHAPTER TWO

Futures Study

Introduction

Developed in 1968 by Andre L. Delbecq and Andrew H. Van de Ven, the nominal group technique (NGT) blends the benefits of brainstorming with the advantages of quick decision making. In NGT, participants are placed into groups where a facilitator leads them through a tightly structured process that produces a ranked list of ideas (Kidd & Braziel, 1999). Research shows that NGT generates more and better ideas than other techniques (Van Gundy, 1988).

The advantage of NGT is that this format "provides equality of participation among group members. In a less structured group, personality or status differences often sway the direction of group discussion (Van Gundy, 1988)."

For this research project, the NGT was used to develop and identify trends, issues and events related to the use of medical implants for behavior control. The goal was to identify potential trends and future events that may affect the use of medical implants as a crime prevention strategy. The panel represented a diverse representation of the community in age, knowledge, formal education, gender and background (Appendix A).

The Nominal Group Technique

The members of the panel were advised in advance of the NGT process including a definition of trends and events. Several members of the panel had been through the NGT process before and were able to assist with keeping panel members on task. The issue statement generated much discussion in the areas of legal authority versus civil rights and voluntary versus forced or coerced participation. All of the participants were interested in the process and how the information would be used to formulate a possible future.

Trends

The group was provided with the following definition of a trend: A series of incidents or events taking place that seem to indicate a direction in which a particular event may be heading. Trends must be relevant to the issue and clearly stated in terms defined and understood. Trends can be social, technological, economic, environmental or political.

Each panel member was given time to generate ideas about trends that may relate to the issue statement. Using the NGT, the members presented each of his or her ideas until the group felt that the list adequately covered the issue (Appendix B). The group selected, by vote, eight trends they felt had the greatest potential effect on the issue statement. Values were assessed for each of the trends, with a baseline value of 100 for current trends as measured on the day of the NGT. Values for five years ago and five and ten years into the future were identified relative to the base value of 100. The concern column is defined as the level of concern, on a scale of zero to 10, that the trend will have on the issue statement. Corresponding medians for the group individual scores are listed in Table 2.1. Issues surrounding the trends are discussed following the table.

Table 2.1 *Trend Analysis*

Trend	*-5 Yrs*	*Today*	*+5 Yrs*	*+10 Yrs*	*Concern*
1. Funding for Medical Research	140	100	125	183	9
2. Social Treatment	73	100	112	128	7
3. Medical Breakthroughs	84	100	140	186	9
4. Use of Technology	64	100	135	178	7
5. The Number of Retirees	88	100	115	138	8
6. Generational Separation	95	100	109	131	7
7. Personal Involvement in Politics	87	100	113	129	6
8. Need for Security	74	100	127	191	9

T1: Funding for Medical Research

The participants with medical backgrounds noted the dramatic shift in funding and research associated with the increase in managed healthcare. The perception, at the clinician level, is that research dollars were reduced as a result of the controls created during the Clinton administration and the emphasis has been shifted to reduced costs through reduced access. For example, financial incentives for drug manufacturers to work with practicing physicians have been reduced or eliminated. This is seen as a disincentive to development and marketing of new medications. The group believed that the election of George W. Bush as President would result in the relaxing or elimination of Clinton controls (-5 years) and a resurgence of investment capital into medical research . The trend therefore illustrates a gradual decline in research funding during the Clinton presidency and a gradual increase in funding as a result of the Bush administration (+5 years).

There was a brief discussion that Trends 1 & 3 may be in conflict but everyone understood the reduction in medical research funding was not an elimination and therefore research was continuing but not at a level most felt was appropriate.

T2: Level of Social Treatment for Criminal Activity

The group stayed away from the term decriminalization or alternative sentencing indicating that social treatment was a more appropriate social trend. California Propositions 36 and 215 were viewed as examples of how society is looking for social treatment responses as an alternative to incarceration and an attitude toward prevention. The attitude toward prevention includes non-criminal remedies such as governmental funding of anti-smoking campaigns, civil litigation against tobacco and alcohol manufacturers, and an increase in policies toward social accountability.

As treatment for criminal behavior becomes more accepted, the group believed there will be an acceptance of medical treatment to modify antisocial behavior. There were some in the group that felt that the public, while accepting of voluntary treatment, would not be willing to support forced treatment. Forced treatment included those unwilling to give consent as well as those coerced to comply in exchange for reduced incarceration time.

T3: Medical Breakthroughs

Significant medical breakthroughs will lead to increased enthusiasm for additional research as lives are saved that were previously lost and the average age at death of Americans increases. As an example, the breakthroughs in stem cell research are proving to be revolutionary and the level of genetic research will increase.

The genome project was felt to have direct correlation with the issue statement. The mapping of genes combined with the mapping of brain activity and control centers was seen as critical to the success of the use of medical behavior controls.

T4: Use of Technology

As young adults and children become more dependent on, and proficient with, technology for information gathering, sharing and communicating, there will be a depersonalization of society. The use of technology then makes society more willing to restrict others rights and leads to a conservative view toward behavior control of those prone to criminal activity. The group felt that one of the major roadblocks to medical implants as a form of behavior control would be society's unwillingness to interfere with personal rights and privileges. The general use and reliance on technology and the resulting depersonalization of society will help to overcome most resistance.

T5: The Number of Retirees

The group identified a trend toward an increase in the number of retirees in urban areas. They felt that as the retirement population increases there will be a corresponding increase in the expectation for safer neighborhoods. It was also mentioned that retirees vote in higher percentages than young adults resulting in a greater political power base. The AARP is a prime example of the political power of those more than 50.

T6: Generational Separation of Attitudes

The increase in the number of retirees combined with the increased average age at death lead to the trend that there is a growing separation between the attitudes and beliefs of the oldest generation and the youngest generation. It was also noted that the number of generations has grown and that there may be up to five generations vying for political involvement at any one time. This generational diversity may make it difficult to reach a consensus of opinion when it comes to community outreach and involvement. This is of particular interest when outreach and involvement are critical for success, as is the case in this research project.

T7: Personal Involvement in Politics

Community Oriented Policing has given way to Community Oriented Government and the panel discussed the increased personal involvement in local and regional politics. A few people felt that there is a laissez-faire attitude and that personal involvement is merely being seen as a small percent of the population becoming more outspoken and not necessarily the general population becoming more involved. While the discussion was lively with some contrary views, the panel selected the trend as one that may influence the issue statement.

T8: Need for Security

Following September 11, 2001 terrorist attacks, American residents have expressed an increased desire for security and tolerance for the resulting inconvenience has increased. The panel felt that Americans will continue to demand increased security and will be willing to sacrifice certain freedoms, especially the freedom of others, to ensure security. The group discussed the likelihood that the need for security would increase dramatically from year five to year ten as a result of potential terrorist acts and the aging American population.

Trend Conclusion

The trends that the panel felt were of most concern to the use of medical implants were: funding for medical research (T1), breakthroughs in medical research (T3), and the need for improved security (T8). All three of the trends were also listed as showing the greatest increase in ten years from now. The use of technology by the general public also showed a significant increase in ten years from now but was seen as less of a concern than the three previously identified trends.

All of the trends showed an increase at the "+5 Years" and "+10 Years" measures. The only trend to show a reduction from five years ago was funding for medical research. Panel members felt that the changes in presidential administrations would lead to increased investment in research over the next ten years.

An interesting observation is that all of the trends identified as relevant to the issue statement were given in support of the use of implants. There may have been a strong post-September 11, 2001, influence on the panel. Members of the panel who maintain a more liberal view on political issues were either reluctant to express controversial views or more tolerant in their response to conservative ideas.

Events

The panel was provided with the following definition of an event: a single, unambiguous, confirmable occurrence. The panel also understood that the "Year>0" column represents the year in which the probability of the event occurring exceeds zero, "Year+5" represents the probability the event will occur in the next five years, and "Year+10" designates the probability the event will occur in the next ten years, expressed in a percent. The group was very comfortable with the definitions and took to the tasks very quickly. The list of events is provided in Appendix C. The panel selected seven events that they felt would have the greatest impact on the issue statement.

These events and corresponding median, are listed in Table 2.2. Discussion regarding the events follows the table.

Table 2.2 *Event Probability*

Event	*Year>0*	*Year +5*	*Year +10*	*Impact*
1. National Healthcare	10	0%	5%	-8
2. Terrorist Attack on DC	1	22%	30%	+5
3. FDA Adopts Europe RX Standards	2	15%	66%	+6
4. Microchip ID Required	4	5%	57%	+3
5. Insurance Coverage/Genetic Selection	1	30%	70%	+9
6. Physician Elected President	7	0%	11%	+3
7. Single Serial Terrorist Identified	1	12%	80%	+9

E1: National Healthcare Replaces Private Coverage

This was defined as the federalization of private HMO's and the roll-in of Medicare and state-funded medical plans into a newly formed Federal HMO system. The group felt that this plan would jeopardize efforts to use medical implants for behavior control. They expressed an opinion that managed healthcare underutilizes medical services as a way of saving money by reducing costs. A federal system would suffer from the same demands to provide a service with the least amount of cost. The result would be a system designed to discourage treatment related research and encourage limited access. While detrimental to the issue statement, the panel predicted that a federal HMO system would have little or no chance of being enacted. The thought was that any such plan would require long-term political party control of both the legislative and executive branches of government, combined with a strong will of the people. No one saw this occurring in the short term.

E2: Terrorist Attack on DC

This was defined as an attack on either the Capitol or White House. Any successful act of violence of this magnitude would tend to result in a more conservative position on civil rights and public opinion that is more willing to accept behavior control. People want to control uncertainty during a time of crisis. The event would be negative to the country but would have a positive influence on the issue.

E3: Adoption of Relaxed Rules for Medication Approval by the FDA

Easing of prescription requirements would speed along medications that may help to control antisocial behavior. As medical breakthroughs continue to progress, there will be a push for the U.S. to loosen FDA testing requirements to be more contemporary with standards adopted in Europe. The panel felt that this event occurring in the short term would be unlikely.

E4: Microchip Identification Implants are Required for All Newborns

Identification chips are being used in animals and the group believed that parents will begin to voluntarily request ID chips for their children. This trend was seen as one similar to child fingerprinting. At first civil rights groups were opposed to voluntary fingerprinting for noncriminal reasons and now there exists a community standard that children have fingerprint records that are maintained by the parents. Success with locating a child as a result of an implant will raise awareness and a demand will be made by those without financial means to allow implants through federal subsidies. While the likelihood of this occurring in the next ten years was viewed as low, the impact was seen as significant. Identification implants would result in social acceptability of medical implants, even those administered without consent.

E5: Advanced Genetic Selection Available Under Federal Employee Medical Insurances Plans

The group defined this event as one where insurance companies would pay for embryonic selection to reduce the chance of birth defects. The group felt that this was a likely event over the next ten years as insurance companies do the cost-benefit analysis of aborting or treating a fetus within the womb compared to an untreated birth of a child with serious medical abnormalities. While abortion continues to be a political hot potato, insurance companies will continue to struggle for that profit margin as aging Americans demand more personal choice and self direction with healthcare.

The event was seen as one of the most significant impacts on the issue statement and second highest probability of occurring within the next ten years.

E6: A Physician is Elected as President of the Untied States

The panel indicted the election of a physician would bring a focus to health care issues not necessarily related directly to the issue statement but in a way that would increase funding in research and treatment. There was a discussion from a couple members of the group who felt that political party affiliation would still be the primary source of influence regardless of medical background. However, there was a consensus that a physician would be more likely to positively influence the issue statement.

E7: Terrorist in the United States Identified as a U.S. Citizen

The panel distinguished this event from E2 in several ways. Event 2 is a single terrorist event that would rock the nation because it is an attack on the symbols of freedom in the United States. The identification of a serial terrorist as a male white US citizen would have different effects on the issue statement. The outrage that Mr. McVeigh caused the American people after the Oklahoma Federal Building bombing was different from the attacks of September 11. A serial terrorist would lead Americans to first posture against foreign lands only to soul search for remedies if the terrorist is identified as a U.S. citizen. The assumption for the group was that the terrorist would not be a recent immigrant but someone of multi-generation American heritage.

Event seven was seen as having the highest probability of occurring in the next ten years and having one of the highest impacts on the issue statement. This again may be a result of the events of September 11, and a feeling that the United States is not as secure as most people desire.

The only event that was viewed as having a negative impact on the issue statement was the change from independent healthcare to a federalized system of health care. The medical professionals in the group voiced strong objections to this occurring and the negative influences this would have on prophylactic medical care. Health care as a business is motivated by profit. Profit occurs by increasing income or reducing expenses. Health care subscribers can readily see increases to premiums and generally view any increase as profit-taking by someone other than themselves. It is less expensive for private providers to offer prevention strategies than it is to treat patients for preventable illnesses or diseases.

Federal programs are not driven by the desire for profits and tend to become overly bureaucratic. In such a system, limiting access and therefore reducing work is a serious motivational factor.

Cross Impact Analysis

The trends and events identified earlier were analyzed by four members of the NGT panel using a cross impact analysis. Each single event was viewed as a potential effect on each individual trend which would then influence the issue statement. The impact on the issue statement was then assigned a value ranging from -5 to +5: minus five represented the extreme value for a negative impact and plus five indicates extreme positive impact on the issue statement. Zero represents no impact. Median values were used and are represented in Table 2.3.

Table 2.3 *Cross Impact Analysis*

Trend / Event	T1	T2	T3	T4	T5	T6	T7	T8
E1-Nat. H.C.	-4	0	-4	0	0	-1	-1	+1
E2-Attack	+2	+4	+3	+1	+4	+1	+1	+5
E3-FDA	+5	+3	+4	0	+2	0	0	+1
E4-Microchip	+1	+2	0	+1	0	+1	-1	+2
E5-Genetic	+4	+1	+4	+1	0	+2	-1	+2
E6-Dr President	+5	+1	+4	+2	+1	+2	+1	+2
E7-Terrorist	+4	+2	+3	+3	+3	+1	+3	+5

When compiling the cross impact analysis, the group identified several significant trend changes as a result of the identified events. The trends that would be affected most by specified

events were: the amount of funding for medical research (T1) with five of the events creating an impact of plus or minus four or five; medical breakthroughs (T3) was influenced by three events; and the need for security(T8) had two +5 impact events.

The two events that are related to acts of violence, E2 and E7, while negative as events, had the most positive potential impact related to the issue statement. Members felt that violent criminal behavior would create an environment in America that would be supportive of greater identification and controls over violent criminals. The greater need for control would then create support for medical implants as a way of crime control.

As the only negative event on the issue statement, nationalized healthcare (E1) would result in a significant reduction in the amount of money spent on medical research (T1) and medical breakthroughs (T2). The profitability of medical research would be reduced and a corresponding reduction in investment dollars would follow. The same conclusions were reached for medical breakthroughs. Reduction in profitability results in a reduction in investment and risk-taking. It was interesting to note that the one event that was negative on both the cross impact and event table was the least likely event to occur (see Table 2.2).

The opposite was true for events E3, relaxing of the FDA approval process, and E5, insurance funding of genetic screening. The group believed that if these events occurred, the public would also be more accepting of medical implants for behavior control without the need for traumatic events as discussed in E2 and E7.

Alternative Scenarios

Optimistic Scenario

Sacramento, California, November 2010

Officer Abdul Johnson floats along Sacramento's K Street Mall aboard his personal transportation device. Officer Johnson had been told stories by the old timers of the days when beat officers walked the mall. Walking was not something that Johnson could imagine. How could a person walk around for an entire shift?

What struck him as even more incomprehensible were the stories of how the K Street Mall was filled with drunks and people suffering from mental disorders. He was told about Proposition 13, something that occurred ten years before he was born, and how it resulted in reduction of mental health funding. The old timers complained that Prop 13 dumped thousands of mentally disabled people into the streets.

How could a person with a mental disorder cause any problems, he thought to himself. They are medicated and at times function better than those without mental disorders. The same for alcoholics. All a police officer was required to do was identify someone with a chronic alcohol problem, which negatively affects the community, place them on an Alcohol Behavior Control Hold (ABC Hold) and the person with the problem is offered a free anti alcohol implant.

Officer Johnson's G.P.S./PCD alerted him that Johnnie Appleseed was at the Zero Gravity Therapy Salon. Johnson decided to make contact and check on Appleseed's parole conditions. Appleseed is a convicted sex offender who is also a Sexual Offender Implant Registrant (SOIR). As an incentive for early release, the offender is required to complete half of his sentence, receive a permanent G.P.S. tracking implant and a time release medical implant that controls all violent tendencies and eliminates sexual drive.

Appleseed is doing well and holding down a job. His GPS chip history showed that he has not been near anyone under 18, easily determined since all minors have been implanted, and that he has had no violent brain waves and that the prescription implant is working. The miniaturized medical dispensing unit has allowed Appleseed to reintegrate and become a productive member of society.

Johnson reminds Appleseed of his lifetime commitment to the program and bids him a good day and floats down the Mall chuckling about how the old timers must have had it so easy. After all they didn't have to do all this scanning.

Pessimistic Scenario

Sacramento, California, November 2010

Officer Abdul Johnson rides his bicycle down Sacramento's K Street Mall keeping a vigilant eye out for any registered sex offenders, parolees or mentally ill folks living in the rundown one room hotels known as SRO's. Johnson heard that SRO stood for single room occupancy but he wasn't sure if it was folklore. He'd also heard that booking reports were called "yellows," but he wrote that off as folklore because who in their right mind would want a yellow terminal screen. He had no idea that booking reports were yellow colored paper forms.

As the city expanded the Convention Center with fancy hotels, restaurants and shops, city leaders failed to push for tighter controls on old rundown SRO's. The problem was compounded by the massive release of prisoners from the prison system as a result of an ACLU legal action. Topping that was an elimination of publicly funded mental health programs. Now the only person available to help the mentally ill is the cop on the beat and Johnson is feeling the strain.

The Convention Center has seen bookings decline after a group of sex offenders assaulted a woman attending an international Margaret May Cosmetics convention. To make matters

worse, the only witnesses to the attacks are former residents of the Gray Davis State Mental Hospital. They are walking around after being dumped onto the streets after its closure in June. With revenues down, restaurants and shops are going out of business, and the downtown core is turning into a scene from a bad *Mad Max* movie.

Officer Johnson spots a group of 15 parolees all drinking and smoking marijuana. He turns the other way in disgust. There is nothing he can do. There is no room in the jail and it wouldn't matter anyway because the prison system wouldn't accept them. Johnson mutters to himself, "Maybe I should be a firefighter? "

Surprise Free Scenario

Sacramento, California, November 2010

It's another work day in the capital city for Officer Abdul Johnson as he rides his bicycle down Sacramento's K Street Mall. He's been working this assignment for the past three years enjoying every minute. The variety of work and the interaction with people from all walks of life keeps it interesting. He thought about taking the sergeant's exam then asked himself why, "I'm paid to work out with all the bike riding during the shift. There are enough transients, drunks and parolees in the mall area to stay busy. The Convention Center attracts some decent events. Life is good."

Today Officer Johnson has decided to tackle a problem in front of the Clinton Hotel. He has received numerous complaints about drinking and loitering out front. As he approaches, he can clearly see a couple of familiar faces. "Hey, Ringo, I thought you were at Detox?" Johnson questions. Ringo just grunts as he tries to hide the paper-bag-wrapped bottle of screw-top Port. Johnson takes the bottle and calls for the wagon to take Ringo back to Detox.

As he deals with Ringo, a few members of the crowd start walking off. "Hold up, guys. I need to talk to all of you," Johnson politely urges. They all stop, turn back toward Johnson and start muttering under their breath. They all know Johnson is going to harass them about not taking their medications or checking in with their mental health case workers. He may even send a couple of them back to Sacramento Mental Health Center (SMHC) for a couple days. Not that SMHC is a bad place, it just breaks up the routine of waking up, drinking with friends, yelling at pedestrians on the mall and passing out in a one-room flop house.

Johnson hands Ringo over to the wagon crew, enters his activity into his PDA, admonishes the rest of the group to stay off the Mall and rides off toward the Convention Center. There is a Convention in town and he needs to show a little police presence. "What a great job," he says to himself, "I wouldn't trade it for anything!"

Conclusion

Future forecasting is designed for anticipatory planning. It is not a prediction of the future but a way of examining alternative futures. The forecaster can then make reasonable assumptions necessary to guide an organization toward positive outcomes based upon alternative futures. The systematic techniques used in this chapter will assist in formulating the strategic plan and transition management documented in Chapter Three.

CHAPTER THREE

Strategic Planning and Transition Management

Introduction

A strategic plan is a long-term, future-oriented process of assessment, goal setting, and strategy building. It is a structured approach, sometimes rational and sometimes not, of bringing anticipated futures to bear on today's decisions (Eienstein, 2002). A strategic plan allows an organization to position itself based upon potential future outcomes. It helps to establish a vision of the organization in the future and provides clarity of direction. It is not purely analytical in nature but a process balancing quantitative and qualitative, objective and subjective, structure and creativity.

The plans, for this research project is to define strategies that will develop, implement, and manage a large urban law enforcement agency's efforts to facilitate the use of medical implants for behavior control. To implement the plan, it will be necessary to work through issues identified in the trends and events section of Chapter Two. The more sensitive issues must be dealt with fairly and appropriately if support is to be generated with involved parties. Interested parties can be placed into two general groups, stakeholders and snail darters.

A stakeholder is an individual, group or organization who may be affected by the process or outcome of the strategies designed in the strategic plan. It is important during the planning process that stakeholders are adequately and appropriately identified and involved in the process. To leave out a stakeholder in the interest of time, priority, convenience or ignorance may result in a stakeholder becoming a snail darter.

Snail darters are individuals, groups, or organizations who often go unidentified during the initial strategic planning process. Because they go unidentified, their input is often excluded, overlooked or ignored. The effect of snail darters on transition management, when they do eventually become involved, can be detrimental to the process.

Transition management is designed to assist moving the organization from the status quo to a desired future state as identified in the strategic plan. The transition plan describes the output of the strategic plan to the stakeholders and serves as a guide for the organization to set priorities, make decisions and allocate resources.

The city of Sacramento, population 418,700 (SACOG, 2002), will serve as the project's city of choice. Founded in 1849, Sacramento was California's first charter city and is the capital of California. Sacramento has become a destination spot for tourism with attractions including the state capitol, North America's largest railroad museum, miles of water ways, cultural activities and two professional sport teams. Sacramento is served by law schools, a California State University, University of California teaching hospital and numerous community colleges.

Within the City's ninety-eight square miles is America's most integrated city as determined for *Time* by the Civil Rights Project at Harvard. The ethnic composition of the city is approximately 41% Non-Hispanic white, 17.5% Asian, 15.5 % African American and 22% Hispanic. With no ethnic majority, Sacramento provides the clearest view into the nation's future with glimpses into what neighborhoods, schools, churches and police forces may look like in just a few decades (Stodghill and Bowler, 2002).

The Sacramento Police Department has eleven hundred employees who provide services to the community. The Chief of Police is the highest ranking officer in the department. The annual budget of the department is $90 million. "The mission of the Sacramento Police

Department is to work in partnership with the community, protect life and property, solve neighborhood problems and enhance the quality of life in our City."

The department has been recognized as a leader in the area of community oriented policing throughout the world. It manages one of three Regional Community Policing Institutes (RCPI) in the state. RCPI trains law enforcement and community members in community policing philosophy, strategies, and tactics. "The mission of the RCPI is to provide quality Police Ethics and Integrity training, Emerging Issues in Community Policing training, and technical assistance for law enforcement, community members and local government."

Strategic Plan

Of the three scenarios discussed in Chapter Two, the optimistic scenario illustrates the most potential for behavior control through medical implants with the goal of improving the quality of life for the greatest number of people. Using the optimistic scenario as the vision for the future, the strategic planning process has been broken down into three major areas: organizational capacity analysis, stakeholder and snail darter identification, and strategy development.

Organizational Capacity Analysis

Organizational capacity analysis is an objective inventory and assessment of the organization's strategic strengths and weaknesses. This is accomplished by using the SWOT model to analyze the organization's internal *S*trengths and *W*eaknesses and view them according to environmental *O*pportunities and *T*hreats. The tool examines organizational function as it relates to specific tasks performed by the organization.

Internal strengths.

- Because of an established community policing and problem solving attitude within the organization, there should be little if any resistance to acceptance and implementation.
- Computer technology has increased the speed and efficiency with which information is processed and utilized.
- The department has established itself as a leader in creative grant applications and utilization.
- The executive management of the organization has developed a skill of creative problem-solving.
- The community supports concepts and ideas that improve the quality of life in the community.
- The use of DNA for suspect identification and data-banking creates a climate for the acceptance of scientific research and implementation.

Internal weakness.

- Law enforcement in general and the department specifically is not scientifically driven in the area of behavior, genetics and pharmacology.
- Experts in advanced genetics are nonexistent in the law enforcement field.
- There are no formal communication links between law enforcement and medical researchers.
- Current resources create an inability to effectively market the strategic plan.
- There is a lack of formal partnerships between law enforcement and medical communities.

Environmental opportunities.

- The ability to significantly reduce crime through prevention strategies developed within the medical communities.
- Success in acquiring funding for medical research related to crime prevention.
- The availability of improved hardware and software solutions for law enforcement agencies.
- The ability to partner with previously untapped organizations.

Environmental threats.

- Uncertainty of funding for medical research related to behavior.
- The inability to predict the level and use of advancements in genetic behavior research.
- Potential legal action from civil rights groups attempting to limit the use of genetic research for behavior control.
- Negative media coverage related to any partnerships between medicine and law enforcement related to behavior control research or application.
- Lack of support from the community for medical & law enforcement partnerships.
- The loss of support from medical partners.
- Heavy reliance on medical partnerships may lead to a perception of scientific experimentation.
- Work in this area maybe too creative and risky for elected officials.

Stakeholders and Snail Darters

The next step in the process is the identification of stakeholders and snail darters followed by analyzing their specific concerns and expectations. The stakeholders and snail darters identified for this strategic plan are:

- Communities that will be directly affected by any changes in quality of life issue.
- Law enforcement agencies that will assist in the identification of potential recipients of medical implants.
- Mental health practitioners who will be responsible for administration and oversight of those selected for implants.
- Medical researchers responsible for identifying links between genetic abnormalities and criminal behavior.
- Biomedical researchers who would see the results of their labor put to practical use. Additional funding may also become available as the importance of research is brought to greater public attention.
- University teaching hospitals that would benefit from increased research and partnership opportunities.
- Courts that may see recommendations for sentence adjustments based upon a willingness to receive treatment.
- Legislation authorizing the release of DNA samples currently collected by correction and law enforcement agencies for medical research.
- Elected officials who will be required to take a position on genetic research, identification and treatment, and possibly vote on legislation presented on the issue.

- ACLU, NAACP and others who will oppose medical links with law enforcement as perceived discrimination and violation of confidentiality laws.
- Public safety labor unions whose members would see a reduction in violence against staff. Support would apply political pressure to elected officials for support of legislative changes.
- Media which has been described as the fourth arm of government is a stakeholder in almost everything law enforcement agencies propose.

The most likely snail darters are civil rights protection organizations and legislators who aggressively support them. Both may perceive any connection between genetic make-up and criminal behavior as discrimination under existing Americans with Disabilities Act (ADA) provisions. With California prison populations over-represented by African-Americans as compared to the total state population, bias in determining a genetic causal link to violence will become an issue.

Strategy Development

With the identified stakeholders in mind, the following strategies have been identified to develop and implement the use of medical implants as a behavior control strategy to reduce crime and improve the quality of life in communities such as Sacramento.

Strategy one. Develop a police-sponsored cabinet to include selected stakeholders including medical, legal, community, government and public safety representatives. The duties and responsibilities of the cabinet include, but are not limited to, external assessment, internal assessments, direction-setting, implementation and evaluation.

Strategy two. Seek out and acquire research grant funding designed to link genetic behavior research with criminal behavior. The partnerships formed through the cabinet are essential to demonstrating a willingness on the part of stakeholders to work toward identified short- and long-term goals.

Strategy three. Establish a long-term partnership between the medical research community and public safety. The goal of the partnership is to establish a common understanding that violence is a public health issue and should be the concern of medical researchers and practioners. The partnership establishes a direct connection between behavior treatment researchers, medical providers and those directly confronted with the effects of behavioral abnormalities.

Transition Management

In his book, *Managing Change*, Donald Kirkpatrick (1995) identifies three elements necessary for successful transition management: empathy, communication and participation. All three components, if viewed from a larger perspective and taken as a systematic plan for change, are interrelated and co-dependant. Empathy is defined as the "identification with and understanding of the thoughts and feelings of another" (Webster's, 1996). Empathy thus must have a form of effective communication. Individuals cannot have empathy unless they discuss the thoughts and feelings of all persons involved. That communication must be participatory in nature. It must be two-way communication which by definition requires participation by all

parties (Kidd & Braziel, 1999). The transition management plan has been designed to encourage and develop empathy, communication and participation within the three identified strategies.

Strategy One requires support, collaboration and cooperation from leaders with different organizational backgrounds and objectives. Individuals will need to embrace and incorporate highly technical applications within their current paradigms. Major obstacles to overcome will be the lack of sophisticated scientific skills combined with the continuous breakthroughs in genetic research, information technology and related parallel developments. A secondary obstacle will be encouraging those lacking in community engagement to understand and accept the need for the community to be involved in such a scientifically-driven endeavor.

The cabinet will need to create committees designed around logical systems issues and outcomes. Essential start-up committees include, but are not limited to: technology assessment, research assessment, legal review, legislative review, application development, oversight, information and marketing. The committees, as a whole, will need to adequately represent the stakeholders. Without the public advocacy and support of the stakeholders, the success of both the transition and strategic plans are at risk.

The committee assigned to public education and marketing will conduct forums and presentations discussing relevant scientific advances, potential applications as well as ethical issues. Members of the committee must include stakeholders who opposed to the use of medical implants for behavior control. The discussions generated by the committee must be candid and open to praise and criticism.

The responsibilities and benefits of Strategy Two go beyond financial. Medical research grants, along with law enforcement grants, will combine two previously uncoordinated funding opportunities. Federal and state law enforcement grants designed to implement and improve

Community Policing will be reviewed for potential application to genetic research. Law enforcement grants and medical foundation funding sources will be reviewed for applicability to violence as a public health crisis.

Strategy Three has some of the same obstacles as Strategy One. The disparity in scientific knowledge between participants from the medical, behavioral research and public safety communities will require a common ground. To accomplish the necessity and desire for understanding the needs of the interested parties, a work exchange program will be created. Members of the research and public safety teams will work in concert to exchange ideas and interests.

The team building that results from partnerships formed as a result of Strategy Three will lead to additional opportunities. Individuals who come together as a team, leading the way to new discoveries, will form a lifetime of admiration and respect. The admiration and respect that result will contribute to additional creativity and boundless accomplishments. All of this results in an enhanced commitment to the success of the transition and strategic plans.

The oversight committee would be responsible for developing a vision and mission for the use of medical implants for behavior control. A sample vision statement might read: To use medical implants for behavior control according to the Medical Code of Ethics. A sample mission statement might read: To work in partnership using the knowledge and technology developed by behavioral and neuropsychopharmacology research as an effective tool to reduce crime and improve the quality of life in communities.

Commitment Plan

An important aspect to organizational change is the critical mass of individuals or groups whose active commitment is necessary to provide the energy required for change to occur

(Beckhard and Harris, 1987). Critical mass represents the minium number of individuals and groups necessary for the change to occur. Without their support, the change will likely fail or not occur.

The following individuals and groups should be included in the transitional process to facilitate success:

- Community organizations
- Medical researchers
- City Manager
- City Council
- California Attorney General
- Media
- American Civil Liberties Union
- Chief of Police

The eight key stakeholders have been listed in a commitment chart (Table 3.1). The commitment chart illustrates the current level of commitment with an "X." The "O" is the minimum level of commitment required of the stakeholder to allow law enforcement to facilitate the use of medical implants for behavior control to reduce crime.

Table 3.1 *Commitment Table*

Group/Individual	*No Commitment*	*Let Happen*	*Help Happen*	*Make Happen*
Community	X		➔O	
Medical Researchers			X	➔O

City Manager	X	→O		
City Council	X	→O		
Attorney General	X			→O
Media	X		→O	
ACLU, et al.	X	→O		
Chief of Police	X		→O	

The Chief of Police will serve as the initial catalyst that will start the project. His leadership role will later transition to that of a facilitator as the leadership transitions to the Attorney General. The Chief's continued involvement beyond his initial leadership is critical to the success of the project.

The Attorney General for the State of California must assume a leadership role in this transition plan. The project cabinet, Chief of Police, City Manager and City Council must impress upon the Attorney General that his leadership is critical to the success of the project. As the leading elected law enforcement officer, the Attorney General has the political power to bring together the critical mass. It may also become necessary to gain legislative support and the Attorney General's position carries with it strong political influence.

Information flow to the media and community will help to reduce the potential anxiety of using genetic research as discussed in the project. Providing the media with information and access for stories will help to encourage accurate reporting and impartial treatment. Any significant breach perceived by stakeholders will jeopardize the project. Prescheduled media releases and press conferences need to be organized by the information and marketing committee. The committee's role is to provide timely and accurate information in an easy-to-

understand format. A web page updated monthly with information, links and calendar of events will be managed by the committee.

The success of any project of this magnitude requires coordination, cooperation and information. The pace with which genetic and behavior research is advancing is mind-boggling. Implant technology is currently providing a better quality of life for people in need. The strategies presented in this plan provide for an opportunity previously unheard of in law enforcement. The partnership between medicine and public safety brings together two disciplines that on the surface have little in common. But, after careful review, they are destined to be inseparable. Violence is a public health issue. Once research and technology are used to reduce crime, the quality of life will improve in every community.

CHAPTER FOUR

Findings and Conclusion

Findings

The research for this project revealed a vast amount of scientific knowledge regarding human genetic theory. Breakthroughs have allowed researchers to unscramble and map the human genetic puzzle. These advances combined with computer technology have provided opportunities that just a few years ago would have been viewed as mere science fiction. Today, genetic research and computer technology are being applied mechanically with electronic implants to assist the physically disabled, pharmacologically with targeted drug therapy, surgically with laser technology and prophylactically with pretreatment based on identified genetic risk factors.

There is much debate over genetic research as a viable way to predict behavior. William Wright in his 1998 book, *Born that way: genes, behavior, personality*, discusses the myriad of views supporting and opposing genetic links to criminality. Some argued that the theory of a crime gene is utter nonsense. They state criminality is a result of many different interactions that, when combined, produce a particular result. Included are environmental factors that may influence or spark a predisposition toward particular behaviors. Still others would argue that the criminal justice system has for decades focused on environmental factors for criminal behavior and neglected genetic causes.

This research project would argue that both positions are correct. For centuries criminologists have neglected genetic predispositions to certain behaviors as the critical link to crime. In fact, information available to make such a link didn't exist. Research is just now exposing how strong that link may be. The theorists of today, with much greater knowledge,

cannot blame researchers of the past for conclusions that were not reached because the information was not available.

A view from the opposing school of thought is that predispositions do not make criminals; a complex set of environmental factors combined with predispositions results in criminal behavior. They assert that without environmental factors such as poverty, literacy, and drug availability serving as the trigger, the criminal predisposition would lay dormant. This school believes the overt criminal response is environmentally driven and is not solely genetic in nature.

Individuals who blindly assume either of the two hardline positions must be educated that a universal view is more contemporary given the speed of scientific breakthroughs. The triangle of crime discussed in Chapter One illustrates that three things must be present for crime to occur: a victim, location and an offender willing to take advantage of the situation. The criminal behaviorist would argue that too much time has been spent focusing on the environment and not enough on the criminal. The social activist would argue that the cause of crime is more closely related to the environment within which the potential offender resides. Real time information combined with future capacity will allow for modification of predisposed behavior prior to, or simultaneously with, the environmental trigger that historically would have resulted in antisocial or criminal behavior.

The continued application of scientific breakthroughs will be limited only by society's tolerance for change. The computer revolution of the past two decades has helped to prepare the world for what is becoming the genetic revolution of today. Biochemical codes are being revealed that will unlock the causes of disease and assist in predicting human biological

processes related to behavior. Law enforcement leaders can approach this future with an eye toward application and investment, or withdraw and hope for the best.

Implications on Leadership

Law enforcement leadership must review the lessons learned from the computer revolution and apply them to the genetic research revolution. Leaders cannot afford to wait until methods are tested and applied in the private sector before becoming actively engaged in the process. Genetic research will change the way Americans live, work and play. Public safety has always been, and will continue to be, an important part of everyone's life; the genetic revolution is no different.

As the world begins to understand and utilize biomedical research, law enforcement will be tasked with applying the same breakthroughs to criminal behavior. Judicially imposed medical treatments will either complement or replace prison terms. Rehabilitation through medical treatment will become the norm replacing punishment as the primary form of deterrence. Correctional facilities will be tasked with medically treating and funding those with identified genetic behavior disorders. The resulting costs associated with treatment during incarceration will create an immediate financial burden on the correctional system as prison populations stay at or near current levels while treatment is expanded. However, over time, genetic rehabilitation for criminals will reduce prison sentences and ultimately the cost of imprisoning those convicted of crime. Even if the numbers of crimes increase there may even be a time when America will close prisons.

As computer technology has changed the way law enforcement provides service, genetic applications will have a significant influence on policing. In addition to potential applications in the criminal justice arena genetic breakthroughs will improve the quality of life for a majority of

the population. Advances in medicine will increase the life expectancy of Americans and those living longer will also remain healthier in what previously was regarded as the declining years.

As the demographic shifts favor older Americans, law enforcement service demands will change. Older populations will become more involved in community politics and society will see a universal acceptance of community oriented government. Applicants for employment to law enforcement agencies will include second career older individuals. The added level of maturity will influence the younger new hires. Agencies may also see an increase in the number of senior volunteers.

The challenge for law enforcement leaders is to bring together all of the stake holders and inform them of the potential to reduce crime through the application of genetic research related to behavior. Through behavior control as a crime prevention strategy, the quality of life for everyone, including those with behavior disorders, will be improved. The message that must be delivered is that education, and not fear, should drive decision-making.

This will not be an easy task. Many will be fearful that such an endeavor violates all that America represents. Some may fear that freedoms will be taken away and the powerful elite will find a way to gain control of society through misuse of implants. Personal liberties will become the hot button for civil rights groups and all who oppose the proposal.

These changes will take planning, participation, commitment and leadership. Law enforcement professionals will need to work in areas where they have little knowledge and must be willing to trust professionals from the medical community in the identification and implementation of solutions. By working in areas previously unexplored, partnerships and alliances will be formed that will allow everyone to better utilize resources and prepare for the changing world.

Budget and Funding

The costs associated with this plan are difficult to determine. There are no current partnerships to model a budgetary plan after. The law enforcement commitment to the plan includes staff, facilities and supplies required to facilitate meetings and conduct grant research and writing. Grant funds, both public and private, will be required if genetic research is going to be applied to behavior control for crime prevention.

Many of the genetic discoveries will have tremendous value in the private sector. The ability to detect and treat genetic disorders has the potential to help individuals become more productive. It also allows for screening of employees in sensitive positions such as public safety. It additionally could reduce birth defects and eliminate disease. The applications of genetic research will be limited only by society's comfort level.

Opportunities not commonly discussed in public are those related to financial investment. The potential return on investment has great potential for investors willing to fund additional research and application possibilities. Law enforcement leaders must continue to be mindful of conflicts of interest when working with private sector partners and elected officials.

Conclusion

Combining all of the technologies discussed in this research has the potential to create the following alternative scenario for little Missy Barnes:

> James Doe, out for his morning walk spots Missy Barnes blowing soap bubbles into the street. Subconsciously Doe's neurons start firing sending out a stimulus that if left unchecked would trigger a violent sexual desire. However, before the stimulus is received, an artificial muscle surrounding an implant releases an electric impulse that suppresses the violent emotional trigger. A second implant surrounded by an artificial

muscle releases a psychoactive drug used to treat psychiatric and neurological disorders. The drug has the added side effect of an impaired libido (Pfaus and Everitt, 2002). Doe, based on his genetic markers, has been implanted with three safeguards that subconsciously retard criminal behavior. Doe returns Missy's proud smile as he passes by on his way to Starbucks for his morning coffee. Minutes later Missy's mom, Julie Barnes, returns to the front yard with John on her hip. Missy again smiles proudly as her favorite audience returns.

Genetic markers can be identified in individuals prior to abnormal behavior. The ability to identify and treat someone before behaviors occur has tremendous potential. Many caution against the use of genetic research as a panacea, pointing out that there are other contributing factors in addition to genetics that influence behavior. However, the same critics forecast that genetic identification of antisocial behavior will lead to early directed service care (Vedantam, 2002). Others see the genetic link to behavior as an opportunity for great things (Bloom, 2002).

Many of the problems that plague communities involve individuals with some type of emotional or personality disorder. Some estimate that those suffering from disorders are seven times more likely to come in contact with law enforcement officers (Bellah, 2002). As agencies struggle to train officers to handle mentally disabled individuals (Hughes, 2002) a more proactive problem solving approach needs to be taken.

The capacity and resources of the criminal justice system are set up to respond to an event more than preventing the event. The ever-expanding knowledge of genetics will change this imbalance in law enforcement. Research has demonstrated that there is a genetic link to behavior. Research has also identified pharmacological solutions to specific behavior abnormalities. Combining these two areas of research with medical implant technology opens

the door to specific genetic behavior therapy through medical implants. It is now time for both law enforcement and medicine to partner and use medical implants for behavior control as a crime prevention strategy.

The strategic plan combined with the transition plan discussed in Chapter Three provide the springboard for a large urban law enforcement agency to use medical implants for behavior control as a crime prevention strategy by the year 2007.

Appendix A

NGT Participant Demographics

	Name	*Occupation*	*Gender*	*Age*
P1	Jim	Lawyer	Male	40's
P2	Laurie	Dentist	Female	40's
P3	Lauren	Teacher	Female	40's
P4	Randy	Business Owner	Male	40's
P5	Joe	Retired	Male	70's
P6	Megan	Student	Female	Teen
P7	Don	Software Exec	Male	40's
P8	Danielle	Student	Female	Teen

Appendix B

List of Trends

Alzheimer research

Attitude toward personal security

Availability of crime data information

Confidence in police

Confidence in government

Computer technology

Crime rate

Disparity between wealthy and poor

Diversity of the U.S. population

Generation X in political office

Generational separation

Genetic marker identification research

Improved quality of life through use of modern chemistry

Level of social treatment for criminal behavior

Managed health care

Media as 4th arm of government.

Money for medical research

Need for security

Appendix B

List of Trends

Number of medical breakthroughs

Personal involvement in politics

Political power of AARP

Suburban enclaves

Use of animal research for human quality of life

Use of identification implants for animals

Use of internet for information

Use of technology

Appendix C

List of Events

ACLU sues federal government to prohibit all genetic testing for law enforcement

Anti-inflammatory drug Motrin available as smart implant.

Arizona prison offers early release for prisoners will to accept implants.

Death penalty inmate receives life for agreeing to be human genetic test subject.

FDA adopts more relaxed European prescription drug standards.

First test tube DNA selected baby conceived.

French lab clones complete human.

Genetics lab bombed.

Identification of the violence gene.

Law requires mandatory DNA screening of all new born children.

Mandatory DNA testing for all criminals.

Medical insurance companies are required to cover fetal genetic testing for birth selection.

Microchip ID required for all new born children.

Morning after pill is removed from prescription requirements.

National healthcare is provided to all citizens.

Physician elected President of the United States.

President of U.S. bans all funding for genetic research.

Serial terrorist in the U.S. is identified as a citizen.

Terrorist attack on Washington D.C.

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